

USSR

UDC 546.718

SPITSYN, V. I., KUZINA, A. P., TSARENKO, A. F., OLOVA, A. A., BALAKHOVSKIY,
O. A., KODOCHIGOV, P. N., GLAZUNOV, M. P., and KATNER, I. V.

"Synthesis of Metallic Technetium and its Physical Investigations"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 617-621.

Abstract: Highly pure metallic technetium in the form of a silver-ray powder or compact metal (regulus) was produced from tetracyanotungstenium perchnate ($C_6H_5)_4AsTcO_4$ by hydrogen reduction in an electric furnace. The resultant material showed superconductivity with a critical point of 3.2%. A study of the technology for producing the metal from the initial perchnate showed that technetium dioxide is produced after one hour in a hydrogen atmosphere at 260°C, and the metal is produced at a temperature of 1000°C. X-ray structural analysis revealed that metallic technetium has a hexagonal lattice with dense atomic packing of the magnesium type, the lattice parameters being $a = 2.74 \pm 0.005$ and $c = 4.41 \pm 0.005$; $c/a = 1.609$. The radiometric and neutron activation methods of analysis showed extremely minute quantities of trace impurities: Ru-- 10^{-8} , Rh-- 10^{-14} , Al-- 10^{-5} , Na-- 10^{-3} and As-- 10^{-3} gm per gm of technetium. Within the limits of sensitivity of the neutron activation method, no other impurities were detected.

1/1

172 023 UNCLASSIFIED PROCESSING DATE--23 OCT 70
TITLE--CHROMATOGRAPHIC BEHAVIOR OF PERTECHNATE ION ON RESINS OF VARYING
BASICITY -U-
AUTHOR-(04)-SPITSYN, V.I., OBOLOVA, A.A., KUZINA, A.F., GALITSKAYA, N.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1151-4 (PHYS CHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHROMATOGRAPHY, TECHNETIUM COMPOUND, ION EXCHANGE RESIN,
CHEMICAL LABELLING, ISOTOPE, PYRIDINE, POLYMER, SOLUTION ALKALINITY,
DISTRIBUTION COEFFICIENT/(U)AV17 ION EXCHANGE RESIN, (U)AV22 ION
EXCHANGE RESIN, (U)AN40 ION EXCHANGE RESIN, (U)AN29 ION EXCHANGE RESIN,
(U)AN23 ION EXCHANGE RESIN, (U)AN41 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1587

STEP NO--UR/CO20/T3/190/005/1151/1154

CIRC ACCESSION NO--A0116995

UNCLASSIFIED

2/2 023 UNCLASSIFIED

PROCESSING DATE--23 OCT 70

CIRC ACCESSION NO--AT0116995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION COEFFS. (KAPPA) WERE DETERD. OF TCO SUB4 PRIME NEGATIVE BETWEEN ION EXCHANGE RESINS AND WATER AT 1-8 OR 1-13 PH RANGES FOR WEAKLY BASIC OR STRONGLY BASIC RESINS, RESP. KAPPA WAS DETERD. BY LABELLING THE SOLNS. WITH PRIMED TO PRIMEM O SUB4 PRIME NEGATIVE AND BY MEASURING THE RADIODACTIVITY OF THE RESINS AND THE ELUANT, RESP. (RESIN, OPTIMUM PH, MM., KAPPA TIMES 10 PRIMES GIVEN): AV-17 (MODIFIED STYRENE DIVINYLBENZENE COPOLYMER), 8.0, 25; AV-22 (AS ABOVE), 8.0, 10; AN-40 (4,VINYL PYRIDINE, DIVINYLBENZENE COPOLYMER), 4.2, 3.5; AN-25 (2,METHYL,5,VINYL PYRIDINE, DIVINYLBENZENE COPOLYMER), 4.2, 2.1; AN-23 (2,VINYL PYRIDINE, VINYL BENZENE COPOLYMER), 4.0, 0.9; AN-41 (5,ETHYL,2,VINYL PYRIDINE, VINYL BENZENE COPOLYMER), 3.1, 0.7. THE INCREASED SEPN. BETWEEN THE PYRIDINE N AND THE POLYMER CHAIN GAVE LOWER KAPPA VALUES.

UNCLASSIFIED

Acc. Nr: APO038689-KUZINA 6V Ref. Code: UR 0326
PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1,
pp 76-82

GROWTH STIMULATORS AND INHIBITORS IN BLACK CURRENT
DURING THE VEGETATION PERIOD AND UNDER
CONDITIONS OF VARIOUS DAYLENGTH

O. V. KUZINA

K. A. Timiriazev Institute of Plant Physiology, USSR Academy of Sciences, Moscow

Growth inhibitors and stimulators in buds, cortex and leaves of black currant cultivated with different photoperiods were determined each month during a year by paper chromatography. In chromatograms separated in a neutral solution, stimulation zones with R_f 0.2—0.7 were detected which include derivatives of the IAA type and also simple phenols. An inhibitor with R_f 0.01—0.15 appears in autumn when currant goes over to deep dormancy and disappears when the plant goes over to induced dormancy. The growth inhibition zone for R_f 0.65—1 includes flavonol-glycoside whose aglycon properties are similar to those of quercitin, and also phenolic acid and camphorol. The day length on which the currant seedlings are grown affects the level of growth substances in them.

1/2

REEL/ FRAME
19731878

603

AP0038689

Continuous illumination enhances the growth rate of currant and increases the amount of stimulators throughout the whole vegetation period. A 10 hour short day leads to decrease of growth stimulators and to the appearance of the inhibitor not only in the leaves but in the cortex and buds as well. Accumulation of the inhibitor moves from the lower to upper buds and its decomposition also starts in the lower buds. Compared to the inhibitor, the growth stimulators of currant are more mobile and readily change with change of photoperiod. The inhibitor, which is more conservative, monotonously increases on approach of autumn, irrespective of daylength, and decomposes on breaking of dormancy. It is suggested that breaking of dormancy is related to a decrease of the growth inhibitor level. Thus in currant, bud dormancy may be checked by analyzing the native growth regulators.

2/2

19731879

1/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--EXTRACTIVE PROPERTIES OF HEKYL PHENYLSULFONAMIDE PHENYLPHOSPHONATE

-U-

AUTHOR--(051)-SHEVCHENKO, F.O., KULINA, L.A., ASHEYEV, V.M., GOLIK, G.A.

NARBUT, A.V.

COUNTRY OF INFO--USSR

SOURCE--DOPDV. AKAU. NAUK Ukr. RSR, SER. D 1970, 32 (3), 261-3
K

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, SULFONAMIDE, ORGANIC PHOSPHORUS COMPOUND,
SOLUBILITY, DISSOCIATION CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1303

STEP NO--UR/0442/70/032700370261/0263

ACCESSION NO--A0128717

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13MAY70

CIRC ACCESSION NO--AT0128717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHSO SUB2 N:PPHCl SUB2 (0.005 MOLE) IN 25 ML C SUB6 H SUB6 WAS TREATED WITH 0.236 GM IN 10 ML HEXYL ALC. 12 HR TO GIVE PHSO SUB2 N:PPHCl SUB2 H SUB13I SUB2 (II). I (0.001 MOLE) WAS HEATED 3 HR WITH 15 ML 0.4N AM.-ALC. NaOH TO GIVE 60PERCENT PHSO SUB2 N(Na)P(O)PHCl SUB2 H SUB6, DISTRIBUTION CONST. BETWEEN C SUB6 H SUB6 AND H SUB2 O, AND DISSOCN. CONST. 12.441 OF THE FREE ACID WERE DETER.

FACILITY: KIEV, DERZH. UNIV., KIEV, U.S.S.R.

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXTRACTION OF MAGNESIUM WITH THE DIOCTYL ESTER
PHENYLSULPHONYLAMIDOPHOSPHORIC ACID, IN ANALYSIS -U-
AUTHOR-(02)-SHEVCHENKO, F.D., KUZINA, L.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN. KHIM. ZHUR., JAN. 1970, 36, (1), 94-95

DATE PUBLISHED----JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MAGNESIUM, METAL CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1986

STEP NO--UR/0073/70/036/001/0094/0095

CIRC ACCESSION NO--AP0118945

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APO118945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTRACTION OF MG BY MEANS OF THE DIOCTYL ESTER OF PHENYLSULPHONYLAMIDOPHOSPHORIC ACID, C₁₂H₂₂N₂O₅SO₃ NHPO₃(OC₈H₁₇)₂, FOR PURPOSES OF ANALYSIS WAS STUDIED AS A FUNCTION OF THE PH OF THE EQUEOUS PHASE AND THE CONCENTRATION OF THE REAGENT (IN BENZENE SOLUTION). THE DISTRIBUTION COEFF. OF THE MG BETWEEN THE ORGANIC AND AQUEOUS PHASES ROSE SHARPLY WITH INCREASING PH, IN AGREEMENT WITH THEORY. THE COMPLEX PASSING INTO THE ORGANIC PHASE HAD THE COMPOSITION MGA₂ .2H₂O (A EQUALS ACID RADICAL). MINUS G.A.

UNCLASSIFIED

USSR

UDC 542.61:546.791'.6-547.333.4

LIPOVSKIY, A. A. and KUZINA, N. G.

"Investigation of the Extraction of Uranium (VI) From Acetate Solutions With Tetradecylammonium Acetate"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 4, 1972, pp 1127-1131

Abstract: The study of the extraction of uranium (U^{VI}) from acetate solutions over a wide range of pH and the determination of the composition of the extracted compounds was carried out. Tetradecylammonium acetate [R₁₄NHAc] was prepared by neutralizing a solution of tetradecylammonium hydroxide in methyl alcohol by calculating the amount of acetic acid with subsequent distilling off of the solvent and drying the sample in a dessicator. The extraction of U^{VI} was carried out by dissolving the R₁₄NHAc in benzene. Uranium was determined either by gravimetric methods as U₃O₈ or colorimetrically with H₂O₂. The acetate ion in the organic phase was determined by reextracting it with a solution of H₂SO₄ and extracting the acetic acid formed with diethyl ether. The extracted acid could then be titrated with standard NaOH and phenolphthalein indicator. Absorption spectra were also determined on the extracts.

1/2

USSR

LIPOVSKIY, A. A., et al, Zhurnal Neorganicheskoy Khimii, Vol. 17, No 4, 1972,
pp 1127-1131

Depending on the pH and the initial concentrations of UO_2Ac_2 and R_4NAC in the organic phase, different complexes of uranium were found. Below a pH 5 $\text{R}_4\text{NUO}_2\text{Ac}_3$ and $(\text{R}_4\text{N})_2\text{UO}_2\text{Ac}_4$ were found. Above pH 5, $\text{R}_4\text{N}(\text{UO}_2)_2\text{Ac}_2(\text{OH})_2$ were found. If insufficient quantities of R_4NAC were used, complexes of the type $\text{R}_4\text{N}(\text{UO}_2)_2\text{Ac}_3(\text{OH})_2$ and $(\text{R}_4\text{N})_2(\text{UO}_2)_3\text{Ac}_6(\text{OH})_2$ were found.

2/2

USSR

UDC 542.61:546.791.6

VDOVENKO, V. M., KUZINA, M. G., and LIPOVSKIY, A. A.

"Study of the Extraction of U^(VI) From Citric Acid Solutions With Tetradecylammonium Salts"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 705-709

Abstract: Extraction of U^(VI) from aqueous solutions containing citric acid was studied using tetradecylammonium citrate and bromide. The goal of the study was to find optimal conditions for the extraction of U^(VI) and to shed some light on the structure and composition of the extracted substances. Depending on the pH of the equilibrium aqueous solution, two complex compounds were observed in the organic phase with different absorption spectra. Preliminary analysis of the extraction, potentiometric and spectrophotometric data indicated that at pH 2-3 the material extracted from the solution had a formula R₄N⁺UO₂Cit. From solutions with pH > 6 a hydroxyl complex is extracted with the ratio of R₄N⁺/UO₂²⁺ of 1.5 and OH⁻/UO₂²⁺ of 1.3. Using trioctylamine as the extracting agent, the U^(VI) is removed from 0.3 M solution of citric acid in 100% at pH 2.75-3.0. At higher pH the extraction level drops so that at pH 5.15 no U^(VI) is extracted at all.

1/1

- 15 -

USSR

UDC 542.61:546.791'6:546.266-325:543.422'4

KUZINA, M. G., and LIFOVSKIY, A. A.

"Extraction of H₂SO₄ and U(VI) With Trioctylamine Solutions"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 393-396

Abstract: Infrared absorption spectra of solutions of solid preparations of the sulfate, bisulfate, and uranyltrisulfate of trialkylammonium were measured, as were spectra of extracts obtained at high CH₂SO₄ values. It follows from these measurements that (TOAH)₂SO₄ is a distinct chemical species, and not a mixture of the acid and normal salts, as was found, for example, for the case of the TGA oxalate. In the transition from the solid phase to the solution, a reduction in the ν_{N-H} of 80 cm⁻¹ is observed, due to a certain intensification of hydrogen bonding. Further dilution does not lead to changes in the infrared spectrum. It is established that the presence of water in the organic solutions not only changes the degree of association of TGA sulfate, but also affects the symmetry of the sulfate group. It is also shown that the presence of H₂SO₄ in the organic phase in amounts exceeding values necessary for formation of TOANHSO₄ is responsible for changes in the form of the extracted uranium compound.

1/1

- 58 -

1/2 027 UNCLASSIFIED
TITLE--EXTRACTION OF SULFURIC ACID AND URANIUMVI BY TRIOCTYLAMINE
SOLUTIONS -U-
AUTHOR-(02)-KUZINA, M.G., LIPOVSKIV, A.A.

PROCESSING DATE--13 NOV 70

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 393-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE DERIVATIVE, URANIUM, SOLVENT EXTRACTION, ORGANIC
SOLVENT, IR SPECTRUM, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1933

STEP NO--UR/016670/012/002/0393/0396

CIRC ACCESSION NO--AP0132195

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF THE TRIOCTYLAMMONIUM SULFATE (I), BISULFATE (II), AND URANYL TRISULFATE SOLN. AT HIGH H SUB2 SO SUB4 CONCN. ARE MEASURED. FROM THE SPECTRA IT FOLLOWS THAT I IS AN INDIVIDUAL COMPO. AND NOT A MIXT. OF ACIDIC AND NORMAL SALTS AS IS THE CASE WITH TRIOCTYLAMMINIUM DHALATE. IN THE TRANSITION FROM THE SOLID PHASE TO THE SOLN., A DECREASE IN UPSILON SUBN-H BY 80 CM PRIME NEGATIVE IS OBSERVED, DUE TO A CERTAIN STRENGTHENING OF THE H BOND. THE PRESENCE OF H SUB2 O IN THE ORG. SOLN. CHANGES NOT ONLY THE DEGREE OF ASSOCN. OF THE I, BUT HAS AN EFFECT ON THE SYMMETRY OF THE SO SUB4 PRIME2NEGATIVE AS WELL. THE IR SPECTRUM OF DRY SOLID II CORRESPONDS TO DIMER FORMS WITH THE ASYM. H BOND OF THE TYPE O MINUS H. . . O. SPECTRAL CHANGES WHICH MAY BE ASSIGNED TO THE ADDN. OF H SUB2 SO SUB4 TO II ARE OBSERVED IN THE IR SPECTRUM OF SUBSTANCES PRODUCED BY EXTN. AT HIGH H SUB2 SO SUB4 CONCN. THE PRESENCE OF H SUB2 SO SUB4 IN THE ORG. PHASE IN HIGHER QUANTITIES THAN ARE THOSE NECESSARY FOR THE FORMATION OF II IS RESPONSIBLE FOR A CHANGE IN THE FORM OF THE EXTD. U COMPO. ELECTRON ABSORPTION SPECTRA OF THE SOLN. (R SUB3 NH) SUB4 UD SUB2 (SO SUB4) SUB3 PLUS II SUB2 SO SUB4 AND (R SUB4 N) SUB2 UD SUB2 (SO SUB4) SUB2.2H SUB2 O ARE VERY CLOSE TO ONE ANOTHER. THIS AGREEMENT SUGGESTS THAT ONE OF THE SO SUB4 PRIME2NEGATIVE GROUPS COORDINATED TO U REACTS WITH H SUB2 SO SUB4 TO FORM BISULFATE IONS ACCORDING TO THE REACTION (R SUB3 NH) SUB4, UD SUB2 (SO SUB4) SUB3 PLUS H SUB2 SO SUB4 FORMS AND IS FORMED FROM (R SUB3 NH) SUB4 UD SUB2 (SO SUB4) SUB2 (HSO SUB4) SUB2.

UNCLASSIFIED

USSR

UDC 542.61:546.761'6:547.461.2

KUZINA, N. G., and LIPOVSKIY, A. A.

"Investigation of the Extraction of U^{VI} From the Oxalate Solutions Using Tetradecylammonium Oxalate"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 7, Jul. 73, pp 1902-1906

Abstract: Extraction of U^{VI} from oxalate solutions was studied in a wide range of pH of the aqueous solutions. It was shown that, depending on the concentration ratios of the extracting agent and uranium, the latter is extracted in form of various acido- and hydroxyacido complex compounds. When the extracting agent is used in excess, at low pH values, the extracted product has the structure $(R_4N)_2UO_2Ox_2$, while at high pH levels $(R_4N)_2UO_2Ox(OH)_2$ are extracted. With insufficient quantities of the extracting agent, various hydroxyacido complex compounds are extracted.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--16 OCT 70
TITLE--RELATION BETWEEN ANTIPENTYLENETETRAZOLE AND ANTIAMIDOPYRINE ACTION

OF MINOR TRANQUILIZERS -U-

AUTHOR--KUZINA, N.V.

COUNTRY OF INFO--USSR *K*

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 119-63

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRANQUILIZER, ANALGESIC DRUG, AMINE DERIVATIVE, TOXICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0137

STEP NO--UR/0390/10/033/002/0159/0163

CIRC ACCESSION NO--AP0120837

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--16 OCT 70

CIRC ACCESSION NO--AP0120837

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DUXEN (5 MG-KG) AND MEPROBAMATE (200 MG-KG) GIVEN TO RATS REDUCED THE CONVULSIVE EFFECTS OF PENTYLENETETRAZOLE AND AMIDOPYRINE, WHEREAS TRIOXAZINE (100 MG-KG AND OXYLIDINE (25 MG-KG) STIMULATED THEM. THE LD SUB50 VALUES FOR DUXEN AND MEPROBAMATE IN MICE WERE SLIGHTLY INCREASED WHEN COMBINED WITH 100 MG AMIDOPYRINE-KG BUT THOSE OF THE OTHER 2 TRANQUILIZERS WERE REDUCED. THE LD SUB50 VALUE FOR AMIDOPYRINE WAS ALMOST DOUBLED WHEN COMBINED WITH 5 MG DUXEN OR 200 MG MEPROBAMATE-KG AND WAS SLIGHTLY REDUCED WHEN COMBINED WITH 100 MG TRIOXAZINE OR 25 MG OXYLIDINE-KG. THE THRESHOLD OF RATS TO PAIN WAS INCREASED 144PERCENT BY 1 MG DUXEN-KG ALONE AND BY 181PERCENT WHEN DUXEN WAS COMBINED WITH AMIDOPYRINE. COMBINATIONS OF MEPROBAMATE (100 MG-KG), TRIOXAZINE (100 MG-KG), OR OXYLIDINE (5 MG-KG) WITH AMIDOPYRINE (100 MG-KG) INCREASED THE PAIN THRESHOLD 206, 230, AND 391PERCENT, RESP., COMPARED WITH INCREASES OF 97, 104, AND 92PERCENT, RESP., FOR THE TRANQUILIZERS ALONE. AMIDOPYRINE ANTAGONIZED THE EFFECT OF DUXEN ON THE CONDITIONED AVOIDANCE RESPONSE IN RATS, WHILE IT POTENTIATED THE EFFECT OF OXYLIDINE, AND HAS ADDITIVE WITH THE OTHER 2 TRANQUILIZERS.

FACILITY: MOSK. MED. STOMATOL. INST., MOSCOW,

USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--15NOV70
TITLE--PHASES OF VARIABLE COMPOSITION IN A SODIUM CHLORIDE, CESIUM
CHLORIDE, WATER SYSTEM -U-
AUTHOR-(03)-ARKHPOV, S.H., KASHINA, N.I., KUZINA, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1086-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SODIUM CHLORIDE, CESIUM COMPOUND, THERMAL ANALYSIS, X RAY
DIFFRACTION, SOLID SOLUTION, WATER.

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1114

STEP NUMBER--0078/70/016/004/1086/1089

CIRC ACCESSION NO--AP0123106

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 017
CIRC ACCESSION NÜ--AP0123106
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIBLY, IN NaCl,CsCl,H Sub2 O SYSTEM
WAS DETER. AT 25DEGREES. DTA AND X RAY DIFFRACTION STUDY OF THE SOLID
PHASE OF VARIABLE COMPN. CONTG. SMALLER THAN 33.7 MOLE PERCENT NaCl
SHOWED THAT IT IS MADE UP OF SUBSTITUTED AND INTERSTITIAL SOLID SOLNS.
OF NaCl AND CsCl.

UNCLASSIFIED

E/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--RB, CS-CL, CLO SUB3 -H SUB2 O SYSTEM AT 250DEGREES "U"

AUTHOR-(03)-ARKHIPOV, S.M., KASHINA, N.I., KULINA, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1640-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TERNARY FLUID SYSTEM, CRYSTALLIZATION, SOLUBILITY, SOLID
SOLUTION, AQUEOUS SOLUTION, RUBIDIUM CHLORIDE, CESIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1387

STEP NO--UR/0078/70/015/006/1640/1642

CIRC ACCESSION NO--AP0135061

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RBCL-CSCL-H SUB2 O SYSTEM HAS STUDIED BY SOLY. METHOD AND BY X RAY DIFFRACTION. THE SYSTEM FORMS A LIMITED SOLY. OF A SERIES OF SOLIO. SOLN. LIMITS DECRYSTN. FIELDS OF SOLIO SOLNS. OF RBCL0 SUB3 WITH CSCLO SUB3, OF CS(KR)ICL, AND RB(CS)CL ARE DETAILED.

UNCLASSIFIED

USSR

UDC 534.222.2

KESTENBOYM, Kh. S., KUZINA, Z. N., Moscow

"Propagation of Planar Shockwaves in an Exponential Atmosphere"

Mekhanika Zhidkosti i Gaza, No 5, 1971, pp 31-35.

Abstract: A planar explosion is studied in a medium with exponential distribution of density. In contrast to the so-called sector approximation, the flow of energy from the lower area to the upper area is considered; therefore, the solution of the problem at hand produces a more correct qualitative conception of the flow of gas in the last stage of a point explosion in a heterogeneous atmosphere. The numerical solution in both the upper and lower flow areas results in the corresponding limiting self-modelling modes. Calculations are performed until "breakthrough" of the atmosphere. The method of calculation is based on implicit difference approximations.

1/1

- 29 -

I/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PLASTIC BENDING OF BEAMS UNDER A LOCAL DYNAMIC LOAD -U-

AUTHOR-(02)-KUZIN, P.A., KUZIN, Z.N.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA, SERIIA FIZIKO MATEMATICHESKAIY, VOL. 8, JAN.-FEB. 1970,
P. 29-37
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL BENDING, BOX BEAM, DYNAMIC SYSTEM, PLASTIC DEFORMATION,
IMPACT LOAD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0010

STEP NO--UR/0361/70/008/000/0029/0037

CIRC ACCESSION NO--AP0119006

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30DEC70

CIRC ACCESSION NO--APO119006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE SYMMETRICAL BENDING OF A FREELY SUPPORTED BEAM UNDER THE ACTION OF A TRANSVERSE LOCAL PULSED LOAD (A RECTANGULAR PULSE). THE MOTION OF THE BEAM IS DIVIDED INTO TWO STAGES: LOADING AND UNLOADING. FOUR DIFFERENT CASES OF DEFORMATION ARE POSSIBLE IN THE LOADING STAGE, DEPENDING ON THE INTENSITY OF THE APPLIED LOAD AND THE LOADING AREA. THE UNLOADING STAGE CONSISTS OF FOUR PHASES, IN EACH OF WHICH THE DEFLECTION VELOCITY FIELDS ARE SIMILAR TO THE VELOCITY FIELDS IN THE LOADING STAGE. FACILITY: AKADEMIIA NAUK KAZAKHSKOI SSR.

UNCLASSIFIED

Pathology

USSR

UDC 616.988.25-022.395.42-036.8-07:616.12-073.97

STEPANOV, M. A., YEVSEYEV, N. F., and KUZINA, Z. V. Chair of Functional Diagnosis and Chair of Medical Disability, Novokuznetsk Institute of Advanced Training of Physicians

"Condition of the Cardiovascular System in Persons With Remote Aftereffects of Tickborne Encephalitis"

Moscow, Terapevticheskiy Arkhiv, No 9, 1971, pp 95-98

Abstract: Clinical and EKG examination of 109 persons who had suffered from tickborne encephalitis 2 to 40 years before revealed a relationship between EKG shifts and severity of the neurologic sequelae of the disease. Most of the individuals exhibited moderate EKG shifts, chiefly in the T wave, heart rate (tachycardia, bradycardia, sinus arrhythmia), and conduction, but without evident clinical manifestation. In those with severe neurologic disturbances, pain of noncoronary character, and arterial hypertension, the EKG shifts were more pronounced, including signs of interventricular heart-block, persistent extrasystolic arrhythmia, and systolic overload of the left ventricle.

1/1

UDC 577.1:615.7/9

USSR

KUZIV, R.-S., and ALEKSEVICH, Ya. I.

"Effect of Qualitatively Different Protein on Some Biochemical Indices of the Blood of Animals Subjected to the Action of Elemental Sulfur"

Faktory vneshn. sredy i ikh znacheniye dlya zdorev'ya guselemya. Resp. mezhved. sb. (Ambient Factors and Their Significance for Public Health. Republic Interdepartmental Collection), 1970, vyp. 2, pp 51-55 (from RZh- Biologicheskaya Khimiya, No 5, 10 Mar 71, Abstract No 572057)

Translation: Protracted (4 months) introduction of elemental sulfur (0.3 mg/kg per day; daily) into the stomach of rats led to development of activity of catalase and peroxidase of the blood and reduced the concentration of SH groups. There was almost no change in the total concentration of blood proteins, albumins and globulins. The addition of casein to the ration normalized the biochemical indices, which the authors attribute to a reduction of intoxication. The introduction of soybean protein or meat was less effective.

1/1

- 61 -

KUZ'KIN, S. F.

INVESTIGATION OF MEASUREMENT CLOTHES BY RADIATION-ABSORPTION ANALYSIS OF THE AMOUNT OF CADMIUM AND BORON IN A FLUX OF PULSES AND SOLUTIONS

[Article by S. P. Kuz'kin, V. P. Shcherba, Yu. Z. Kornilov, Moscow Institute of Steel and Alloys; Institute of Physics and Technology of Nonferrous and Rare Metals; Ordzhonikidze, Translated from *Metallurgiya*, No. 6, 1971, signed to press 22 January 1971, pp. 14-19]

For automation of the technological processes of enrichment and hydrometallurgy it is necessary to develop sensors by the aid of which it is possible to determine the concentration of elements in moving liquid metal. This paper is concerned with studying several designs for sensors to determine the amount of cadmium in the flux of solutions and pulses using the neutron-absorption method.

In the experiments with different measurement procedures we used a pulse neutron source (1.105 neutrons with $\lambda = 7$) and a cylindrical scintillation detector of slow neutrons with an area of the surface of the luminescent compound $\sim 2 \text{ or } 10^3 \text{ cm}^2$. The pulses were registered with an RDU-29 using a PPS calculator.

During the intensity of the neutron flux, passing through the layer of the material, obeys exponential law [1]

$$I = I_0 e^{-\Sigma n x} = I_0 e^{-\Sigma s},$$

where N is the number of atoms per unit of volume of the target, participation in the process of interaction with the cross section Σ , barns, Σ is the macroscopic cross section, I_0 is the intensity of the incident monochromatic collimated beam of neutrons; I is the intensity of the beam attenuated through a layer with a thickness x , cm.

JPRS 55180
1 May 72

KUZ'KIN, S. F.

INVESTIGATION OF MEASUREMENT ELEMENTS OR NEUTRON-ABSORPTION ANALYSIS OF THE AMOUNT OF CADMIUM AND RUBIDIUM IN A FLOW OF PULPS AND SOLUTIONS

Institute of Steel and Alloys, Department of One Enrichment of Nonferrous and Rare Metals; Ordzhonikidze, Transcarpathia USSR, Tavanyu, Molodilskaya, Russian, No. 6, 1971, signed to press 27 January 1971, pp. 166-169;

For automation of the technological processes of enrichment and hydrometallurgy, it is necessary to develop sensors by the aid of which it is possible to determine the concentration of elements in moving liquid media. This paper is concerned with studying several designs for sensors to determine the amount of cadmium in the flow of solutions and pulps using the neutron-absorption method.

In experiments with different measurement procedures we used a Pu-Fe neutron source (3.10^5 neutrons/sec with γ_E) and a cylindrical scintillation detector of slow neutrons with an area of the surface of the luminescent compound $7 \cdot 2 \times 10^3$ cm 2 . The pulses were registered with an RDU-29 using a RP-9 calculator.

Despite the intensity of the neutron flux, passing through the layer of the material, obeys exponential law [1]

$$I = I_0 e^{-N\sigma_{\text{eff}}x} = I_0 e^{-\Sigma x}$$

where N is the number of atoms per unit of volume of the target, participating in the process of interaction with the cross section σ_{eff} ; Σ is the macroscopic cross section; I_0 is the intensity of the incident monochromatic collimated beam of neutrons; I is the intensity of the beam passing through a layer with a thickness x , cm.

USSR

UDC 669.13:621.746.58

TULIN, N. A., Candidate of Technical Sciences, VAYNSHTEYN, O. Ya., Engineer,
KIZ'KINA, N. N., Engineer, KHUDEN'KIKH, A. A., Engineer, and SNEZHKO, B. Ya.,
Engineer, Chelyabinsk Metallurgical Plant

"The Use of Argon in the Production of Non-Aging Low-Carbon Steel"

Moscow, Stal', No 3, Mar 73, p 226

Abstract: Low-carbon non-aging steel at the Chelyabinsk Metallurgical Plant is melted by the scrap-ore process in 100-ton open-hearth furnaces with oxygen scavenging of the metal. Argon protects the metal flux against oxidation. This method makes it possible to lower the degree of contamination of 6.2-ton ingots by oxide aluminaceous impurities which give rise to laminations in sheet. Argon flux protection decreased sheet rejection by customers and plants by factors of 2.7-4.5 and 3-4, respectively, and increased annual output by 12%. Two figures.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF A CUT ON THE CYCLIC STRENGTH OF STEEL -U-

AUTHOR--(02)-SHASHIN, M.YA., KUZKO, E.R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 3, 1970, PP 33-35

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STRESS, CYCLIC STRENGTH, STEEL PROPERTY, METAL CUTTING/(U)40KH
STEEL, (U)38KHMVUA STEEL, (U)U81 STEEL, (U)KH18N9T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1980

STEP NO--UR/0122/70/000/003/0033/0035

CIRC ACCESSION NO--AP0130755

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--APO130755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SENSITIVITY TO AN ANNULAR CUT IS STUDIED AS IN RELATION TO STRENGTH, TECHNOLOGICAL FACTORS, AND METHOD OF DETERMINING THE THEORETICAL STRESS FACTOR DURING ALTERNATING LOADING OF CONSOLE TYPE CYLINDRICAL SPECIMENS WITH DIAMETERS D EQUALS 12 AND D EQUALS 10 MM MADE FROM 40KH, 38KHMVUA, U81, AND KHL8N9T GRADES OF STEEL.

UNCLASSIFIED

USSR

UDC 621.165-581:539.5

VASIL'CHENKO, G. S., MERIKOV, G. N., KUZLITSKIY, A. S., Central Scientific Research Institute of Technology and Machine Building, Moscow

"Application of the Theory of Linear Mechanics of Fracture to Evaluating the Strength of Turbine Rotors"

Kiev, Problemy Prochnosti, No 9, Sep 72, pp 22-26

Abstract: The authors apply the theory of linear mechanics of fracture to analysis of the maximum strength of the K-220-44 welded turbine rotor made from 34KhMA steel. Linear mechanics of fracture can be used to find the mathematical relation between the geometry of a part, the dimensions of a crack or equivalent defect, the properties of the material, the stress distribution and the so called critical coefficient of stress intensity. This coefficient can be used to find the stresses which lead to brittle fracture of the rotor in the case of a crack or similar flaw of a certain size, or to solve the inverse problem -- to determine the dimensions of the crack which will produce brittle fracture of the rotor at a given speed. The critical coefficient of stress intensity is experimentally determined, and a numerical formula is derived which gives this coefficient in terms of the geometry of

1/2

USSR

VASIL'CHENKO, G. S. et al., Problemy Prochnosti, No 9, Sep 72, pp 22-26

the part and the weakening defect, and the rotational velocity at fracture. The applicability of the method is experimentally confirmed. It is found that the working speed of the K-220-44 rotor can be exceeded by 25% without danger of brittle fracture from inertial and cyclic loads.

2/2

USSR

UDC: 534.014

GANIYEV, R.F. and KUZ'MA, V.M., Kiev

"On Resonant Oscillations of Solid Body With Random Excitation"

Moscow, Mashinovedeniye, No 1, Jan-Feb 73, pp 3-6

Abstract: Conditions for unstable oscillations of a solid body due to random excitation are determined. Solution of this problem is required for the vibration analysis in many practical cases, such as transportation machinery, damping devices and so forth. It is assumed that the random excitation acts along one of the axis of coordinates. The analysis is using the asymptotic method described in "Asymptotic Methods in Nonlinear Vibration Theory" by Bogolyubov, N.N. and Mitropol'skiy YU.A, 1963. The unstable conditions are represented by shaded areas on the graph.

1/1

USSR

UDC669.294.5¹293¹849

SAVITSKIY, YE. M., TYLKINA, N. A., ALYUSHIN, V. YE., KUZ'YA, YU. B., and
TELEGUS, V. S., Moscow

"Ternary Sigma- and Chi-Phases in the Ta-Nb-Re System"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan/Feb 74, pp 229-233

Abstract: The structure and certain physical and mechanical properties of sigma- and chi-phases in the ternary system Ta-Nb-Re were investigated, where it was found that this system is characterized by a large region of ternary solid solutions of Re in Ta and Nb, low solubility of Ta and Nb in Re, and the formation of two compounds of the sigma- and chi-phase type where the sigma-phase exists only at high temperatures, being decomposed into the alpha-solid solution and chi-phase. Lattice parameters, melting points, hardness, resistivity, and transition temperature to the superconducting state were determined for the sigma- and chi-phases. Alloy composition and transition temperatures are given for alloys with a constant Re content (approximately 71%), for the binary chi-phase (Re_3Nb) and the binary chi-phase. The transition temperature to the superconducting state of ternary chi-phases was 1.5-2 times higher than the transition temperature for binary chi-phases in Nb-Re and Ta-Re systems. Two figures, one table, seven bibliographic references.

1/1

USSR

UDC 546.76+546.74+546.27

CHEPIGA, M. V., KRIVUTSKIY, V. P., and KUZ'MA, YU. B., L'vov State University
imeni Ivan Franko

"The Cr-Ni-B System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8,
No 6, Jun 72, pp 1059-1064

Abstract: An investigation was made by x-ray and microstructural methods of the Cr-Ni-B system in the whole interval of concentrations. The investigated specimens, made from metal powders (purities: electrolytic chromium 99.5%, nickel 99.9%, and boron 99.3%), were placed in Al_2O_3 crucibles, heated in a vacuum furnace up to 1400°C , slowly cooled to 800°C , sealed in quartz ampoules, and annealed for at least 300 hrs at 800°C . The isothermal profile of the Cr-Ni-B system at 800°C is shown. A very low intersolubility of borides and the existence of two ternary compounds were established: Cr_3NiB_6 (rhombic structure of the V_2B_3 type, $a=3.034 \pm 0.003 \text{ \AA}$; $b=18.11 \pm 0.02 \text{ \AA}$; $c=2.956 \pm 0.003 \text{ \AA}$) and $\text{Cr}_2\text{Ni}_3\text{B}_6$ (rhombic structure of the V_5B_6 type, $a=2.971 \pm 0.003 \text{ \AA}$; $b=20.34 \pm 0.02 \text{ \AA}$; $c=1/2$

- 73 -

USSR

CHEPICA, M. V., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1059-1064

$\approx 3.011 \pm 0.003 \text{ \AA}$). Both compounds have a crystalline structure, and are the first representatives of these types among the ternary compounds. One illustration, three tables, sixteen bibliographic references.

2/2

USSR

UDC 621.762.001

FEDORUS, V. B., KOZOLAPOVA, T. YA., KUZ'MA, YU. B., and KUGAY, L. N.

"Investigation of the Reaction of Zirconium Oxide With Carbides of Group VI Metals"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 244-250 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G378 by authors)

Translation: An investigation is made of the character of the reaction of zirconium oxide with carbides of Group VI metals -- Cr₃C, Mo₂C and WC -- by the methods of x-ray, chemical, and metallographic analyses. The authors determine the nature of the intermediate and final reaction products, and establish the dependence of the phase composition of the reaction products on sintering temperature. A study is made of the stability of Ti and W carbides and ZrO₂ in acids and in mixtures of acids with oxidizing and complexing agents. A method is suggested for chemical phase separation of the above-indicated compounds. Four tables. Bibliography with 21 titles.

1/1

- 26 -

1/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--CRYSTAL STRUCTURE OF THE COMPOUND YCr₂Si₂O₇ SUB4 AND ITS ANALOGS -U-

AUTHOR--KUZMA, YU.B.

K

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 372-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTAL STRUCTURE, YTTRIUM, RARE EARTH METAL, BORIDE, CHROMIUM
COMPOUND, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1595/0897

STEP NO--UR/00107/015/00270372/0376

CIRC ACCESSION NO--APO116407

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116407
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SYSTEM Y-CR-B, YCRB SUB4 IS AT EQUIL. WITH YB SUB2, YB SUB4, CRB SUB2, CR SUB3+B SUB4, CR3, AND Y. YCRB SUB4 SINGLE CRYSTALS REMOVED FOMR THE MELT CONTG. Y120, CR 20, AND B 60PERCENT ARE ORTHORHOMBIC WITH LATTICE PARAMETERS A 6.600, B 11.49, AND C 3.47 ANGSTROM, SPACE GROUP D PRIME9 SUB2N-PNAM AND C PRIME6 SUB2NU-PB2A2, EXPTL. D. EQUALS 5.14 X RAY D. EQUALS 9.19, AND Z EQUALS 4. Y AND CR FORM THE STRUCTURE, WHICH CONSISTS OF 2 LAYERS AT A DISTANCE A-4 WITH A B ATOM IN THE CENTER OF A TRIANGULAR PRISM. THE STRUCTURE DIFFERS FROM THAT OF SCB SUB2 C SUB2 (SMITH, ET AL., 1966) IN THAT THE 7 AND 5 MEMBERED RINGS ARE FORMED BY B AND NOT BY B AND C AND IN THAT THE POSITION OVER AND UNDER THE 5 MEMBERED RING IS OCCUPIED BY CR. THE INTERAT. DISTANCES IN THE YCRB SUB4 STRUCTURE APPROACHES THE SUM OF RADII OF THE RESP. ATOMS. ISOSTRUCTURAL COMPOS. YCRB SUB4 WERE OBSO. IN SYSTEMS R-CR-B, WHERE R EQUALS Gd, Tb, Dy, Ho, Er, Or Lu. SYSTEMS WITH R EQUALS YB AND Sc DID NOT FORM SIMILAR COMPOS. FACILITY: LVCV. GOS. UNIV., LVCV, USSR.

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--ATO130421
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ALLOY CONTG. 27 CR, 40 FE, AND
33 AT. PERCENT B CONSISTED OF 2 PHASES, I.E. SOLID SOLNS. BASED ON CR
SUB2 B AND FE SUB2 B. WITH INCREASING FE CONTENT IT CHANGED TO A
L-PHASE SYSTEM CONTG. ONLY THE FE SUB2 B SOLN. AT THE COMPN. OF 7 CR, 60
FE, AND 33 AT. PERCENT B. IN AN ALLOY WITH 10 CR, 170 FE, AND 20 AT.
PERCENT B, 3 PHASES WERE OBSO. SOLID SOLNS. BASED ON CR SUB2 B AND FE
SUB2 B WERE AT 900DEGREES IN EQUIL. WITH A SOLID SOLN. OF FE AND CR
(ALPHA PHASE) AND WITH SOLID SOLNS. BASED ON CR SUB2 B SUB3, CRB, AND
FEB COMPDS. THE TERNARY FE SUB1.1 CR SUB0.9 B SUB0.9 CLMPD. OF BROWN
ANG BECRUTSEN (1964) WAS SOLID SOLN. OF FE IN CR SUB2 B.
FACILITY: L'VOV. GOS. UNIV., L'VOV, USSR.

UNCLASSIFIED

USSR

UDC 629.78.015.017.2

BOBTSOV, V. A., BRAUDE, A. Z., KUZMAK, G. Ye.

"Approximate Synthesis of Optimal Control in Variational and Games Problems
of Flight Mechanics with Free End of the Trajectory"

Uch. zap. Tsentr. Aerogidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], Vol 3, No 3, 1971, pp 61-71,
(Translated from Referativnyy Zhurnal, Raketostroyeniye, No 9, 1972,
Abstract No 9.41.115, from the Resume).

Translation: The task of synthesis of optimal control is studied in variational and games problems for cases when there are no conditions at the end of the trajectory except for the conditions defining the end of the trajectory. An approximate method is suggested for solution of this problem, representing a development of the method of local optimization, which is convenient for computer realization. Using this method, it is often possible to find simple approximate analytic solutions of the synthesis problem. Three examples are studied as illustrations: the problem of flight to maximum range, the problem of climbing to an assigned altitude in the minimum time and the problem of the game of two persons controlling the planar motion

1/2

USSR

BOBTSOV, V. A., BRAUDE, A. Z., KUZMAK, G. Ye., Uch. zap. Tsentr. Aerogidrodinam. In-ta, Vol 3, No 3, 1971, pp 61-71

of two material points. Results are produced in the first two examples which have simple physical sense. 3 figures; 7 bibliographic references.

2/2

- 19 -

UDC: 533.652/.661.013

USSR

ALEKSANDROV, G. V., KUZMAK, G. Ye.

"On Calculating the Static Stability of Aircraft at Large Angles of Attack"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1972, 3, No 1, pp 38-44 [from EEh-Mekhanika, No 5, May 72, Abstract No 5B402]

Translation: The authors consider the problem of calculating the static stability of an airplane for various positions of the center of gravity. A formula is derived which relates the increment in the aerodynamic moment to the increment in the aerodynamic force and the position of the metacenter. Most emphasis is given to the case where the range of angles of attack considered includes supercritical angles. It is shown that in such cases, the zone of positions of the center of gravity at which the aircraft is stable over the entire range of angles of attack under consideration is either limited or completely nonexistent. In the case of limited dimensions of this zone, an attempt to increase the static stability of the craft by shifting its center of gravity forward as is done for small angles of attack may lead to the reverse effect. Résumé.

1/1

- 35 -

USSR

UDC 629.78.015.0.17.2

ALEKSANDROV, G. V., KUZMAK, G. Ye.

"Calculation of Static Stability of Flight Vehicles at High Angles of Attack"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta [Scientific Writings of Central Aero-Hydrodynamics Institute], Vol 3, No 1, 1972, pp 38-44, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.124 from the Resume).

Translation: The problem is studied of calculating the static stability of a vehicle with various positions of its center of mass. A formula is produced, relating the increment in aerodynamic moment to the increment of aerodynamic force and the position of the metacenter. Maximum attention is given to the case when the range of angles of attack studied includes supercritical angles. It is demonstrated that in these cases the area of positions of the center of mass at which there is stability for the entire range of angles of attack of interest is limited or does not exist at all. With limited dimensions of this area, an attempt to increase the static stability of the vehicle by displacement of its center of mass forward, as is done for low angles of attack, may have the opposite effect. 3 Figures; 3 Biblio. Refs.

1/1

- 13 -

USSR

UDC 629.79.015.076.8

KUZMAK, G. YE., POPOV, V. A.

"Study of the Transfer of Rotational into Oscillatory Motion Upon the Entry of an Uncontrolled Ballistic Body into the Atmosphere"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1970, Vol. I, No. 6, pp #2-90 (from KZh-RaGekostroyeniye, No 9, Sep 71, Abstract No 9.41.58)

Translation: The problem of determining conditions for the transfer of rotation relative to the center of mass into oscillations relative to the center of mass upon the entry of a ballistic body into the atmosphere is discussed for plane motion. The known analytical solutions are analyzed and a detailed numerical study is made of the sinusoidal moment characteristic. The fundamental parameters are identified and probability evaluations are given for the altitude and angle of attack of the body at the time of the transfer of rotation into oscillations under a uniform distribution of the values of the angle of attack at the boundary of the atmosphere. 5 ill., 5 ref. ResUME.

1/1

USSR

UDC 629.19:533.6

KUZMAK, G. Ye., POPOV, V. A.

"Investigation of the Conversion of Rotary Motion to Oscillatory Motion
When an Uncontrolled Ballistic Missile Enters the Atmosphere"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central
Aerohydrodynamics Institute), 1970, 1, No 6, pp 82-90 (from RZh-Mekhanika,
No 10, Oct 71, Abstract No 10B273)

Translation: The paper deals with the problem of determining the conditions of transition from rotation relative to the center of mass to oscillations relative to the center of mass for plane motion upon atmospheric entry of a ballistic missile. The known analytical solutions are analyzed, and a detailed numerical study is made of the sinusoidal moment characteristic. Basic parameters are derived, and probabilistic estimates are made of the altitude and angle of attack of the missile at the instant of transition from rotation to oscillations in the case of uniform distribution of the values of the angle of attack on the boundary of the atmosphere. Resumé.

1/1

- 24 -

1/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE—COMPARATIVE EVALUATION OF SOME METHODS FOR DETERMINING SEROMUCOID

IN SERUM—U-

AUTHOR—KUZHAK, N.I.

COUNTRY OF INFO—USSR

SOURCE—LAB. DELO 1970, (3), 146-50

DATE PUBLISHED——70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—BLOOD SERUM, CHEMICAL ANALYSIS

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—3001/1790

STEP NO—UR/9099/10/000/003/0146/0150

CIRC ACCESSION NO—AP0127204

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NO--AP0127204

ABSTRACT/EXTRACT--(U) GP-0 ABSTRACT. THE METHOD BY GREENSPAN, ET AL., MODIFIED BY FCNNESU, WAS ACCURATE BUT COMPLICATED. THE METHOD OF WEIMER AND MOSHIN WAS SIMPLE AND UTILIZED SMALL AMTS. OF MATERIAL AND TIME BUT THE RESULTS WERE 20-40PERCENT LOW. THE METHOD MODIFIED BY K., BASED ON AN ADEQUATE SEPN. AND PURIFICATION OF SEROMUCOID, INCREASED THE ACCURACY, WAS SIMPLE, AND WAS RECOMMENDED FOR USE. FACILITY= TSELINograd. MED. INST., TSELINograd, USSR.

UNCLASSIFIED

USSR

UDC: 621.791.01:669.14.018.295

KUZMAK, Ye. M., Doctor of Technical Sciences, and KONYUKOV, K. A., Moscow
Institute of the Petrochemical and Gas Industry imeni Academician I. M. Gubkin

"Weldability of Heat Hardened Steel with 70-80 kg/mm² Tensile Stress"

Moscow, Svarochnoye proizvodstvo, No 5, 1971, pp 16-19

Abstract: The authors study the technological possibility of regulating the properties of the heat affected zone in softening sections. Increased resistance to brittle fracture is also studied. Two grades of heat hardened steel were studied: A grade steel with a bainite-martensitic structure and $\sim 80\text{kg/mm}^2$ tensile strength and B grade steel with a bainite structure and 70kg/mm^2 tensile strength. The results show that the sections of high hardness (A grade steel) formed in welding high-strength grades of steel (in the heat affected zone) and the sections of softening (B grade steel) reduce the strength of welded joints under conditions of biaxial stretching. The presence of large grain sections and overheating results in lower resistance to brittle fracture. The use of the zone regulating method in conjunction with high temperature tempering makes it possible to produce welded joints from high-strength, heat hardened grades of steel which are as strong as the basic 1/2

USSR

KUZMAK, Ye. M. and KONYUKOV, K. A., Svarochnoye proizvodstvo, No 5, 1971,
pp 16-19

metal with respect to their resistance to brittle fracture and strength under conditions of biaxial stretching. High temperature tempering above 600°C results in a secondary softening of welded joints. The value of this softening increases with temperature and tempering duration. At optimal tempering temperature the reduced strength of the welded joint (the result of secondary softening) under conditions of biaxial stretching is compensated by an increase in strength due to a rise in the deformation capacity of the welded joint. This is caused by a reduction in the hardness of the sections about the seam of the heat affected zone. Original article: three tables, six figures, one formula, and nine bibliographic entries.

2/2

USSR

UDC 622.235.5

VOVK, A. A., KUZ'MENKO, A. A., KRAVETS, A. G., and SHINOV, A. G.,
Institute of Geotechnical Mechanics of the Academy of Sciences of
the Ukrainian Soviet Socialist Republic

"On Investigation of the Residual Deformation Zone in Grounds
by Seismometric Methods"

(Presented by Polyakov, N. S., Member of the Academy of Sciences of the Ukrainian SSR)

Kiyev, Dopovidi Akademii Nauk, Seriya A, Ukrainian SSR, № 10,
1971, pp 951 - 954

Abstract / Ukrainian article / : A seismometric method of investigating the neighboring zone of the explosion effect is described. By this method, irreversible deformations of the ground can be determined at distances exceeding by 3 - 4 times the dimensions of the zone of residual deformations. The latter are determinable by other methods. Two illustr., three tables, one bibliog. ref.

1/1

USSR

UDC: 539.86

DIANOV, D. B., KUZ'MENKO, A. G.

"Theory of Spherical Piezoceramic Radiators Which Perform Radial Zero-Order Oscillations"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute), 1970, vyp. 89, pp 182-189 (from Radioelektronika i Vysokochastotnaya Tekhnika, No 11, Nov 70, Abstract No 11.32.503)

Translation: The authors consider the problem of the radiation of a piezo ceramic sphere which performs radially symmetric oscillations. A solution is found which is true for arbitrary sphere wall thickness. The equivalent electroceramic circuit is obtained. Values are given for the parameters of an equivalent circuit which describes operation of the spherical transducer close to radial resonance. One illustration, bibliography of three titles.

1/1

- 95 -

USSR

UDC: 621.317.729

KUZ'MENKO, A. P., Donetsk Physical Engineering Institute, Academy of Sciences of the UkrSSR

"An Electromagnetic Field Strength Meter"

USSR Author's Certificate No 266050, filed 6 Jan 69, published 6 Jul 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A327 P)

Translation: The proposed meter is designed for use in equipment for subterranean radioscopy studies, and also in installations where the signal to be measured varies over a wide range at the input. The meter contains an input device, an attenuator, a high-frequency amplifier, a converter, intermediate frequency amplifier, detector and output registration device. To extend the dynamic range with respect to the input signal, the proposed meter utilizes a relay transistor amplifier with one stable state. This amplifier has a stabilized power supply and is connected in series between the frequency converter and the IF amplifier. Further details of the circuit are given and its operation is described. It is noted that the dynamic range of the meter can be extended from 1.5-2 orders to 3-4 orders. S. L.

1/1

- 43 -

USSR

UDC 621.762.001

KRASOTKIN, I. S., DUBROVINSKIY, R. L., and KUZ'MENKO, A. S.

"Determination of Porosity of Powders by Mercury Porometry"

Zap. Leningr. gorn. in-ta (Writings of Leningrad Mining Institute), Vol 50,
No 3, 1970, pp 148-155 (Translated from Referativnyy Zhurnal-Metallurgiya,
No 2, 1971, Abstract No 2 G401 by the authors)

Translation: The possibility of determining the porosity of powders by mercury porometry is established by calculation and confirmed experimentally. The formula suggested for calculation of the unfilled volume of secondary pore structure of powders allows experiments to be planned which take into account the required measurement accuracy. 3 figures; 4 tables; 3 biblio. refs.

1/1

USSR

UDC 547.26'118

OVRUTSKIY, V. M., KUZ'MENKO, I. I., and PROTSENKO, L. D., Kiev Scientific Research Institute of Pharmacology and Toxicology

"Aryl Esters of N-[4-(1-Phenyl)2,3-dimethyl-5-oxopyrazinyl]-N',N'-di(2-chloroethyl)-diamidophosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1034-1036

Abstract: Title compounds were obtained by reacting the aryl esters of di-(2-chloroethyl)-amidophosphoric acid chlorides with amineantipyrine in acetone and in presence of triethylamine. The products originally are viscous liquids which crystallize after one passage through an alumina column. No biological data are reported.

1/1

USSR

UDC: 615.277.3.011.5

KUZ'MENKO, I. I., RAPP, L. B., Kiev Scientific Research Institute of Pharmacology and Toxicology

"The Hydrolytic Cleavage of the Diphenyl Ester of Di-(2-chloroethyl)amidophosphoric Acid"

Moscow, Khimiko-Farmatsevticheskij Zhurnal, Vol 5, May 1971, pp 7-10

Abstract: The diphenyl ester of di-(2-chloroethyl)amidophosphoric acid $(C_6H_5O)_2P(O)N(CH_2CH_2Cl)_2$ was subjected to hydrolysis at pH 8.3 in a sodium bicarbonate solution and at pH 4.95 in a citric acid buffer. The reactions were followed by paper chromatography and a quantitative measurement of released chloride. The products were subjected to elemental analysis and compared directly to pure compounds of known composition. In the former reaction, they were concluded to be (1) the sodium salt of the diphenyl ester of phosphoric acid $(C_6H_5O)_2P(O)ONa$, (2) 2-chloroethyl-2-ethanolamine $H_2N(CH_2CH_2Cl)CH_2-CH_2OH$.

And in the latter reaction, a single product, the 2-chloromethyl-2-ethanolamine salt of the diphenylester of phosphoric acid $(C_6H_5O)_2P(O)O^+H_2N(CH_2CH_2Cl)CH_2-CH_2OH$ was isolated.

1/1

USSR

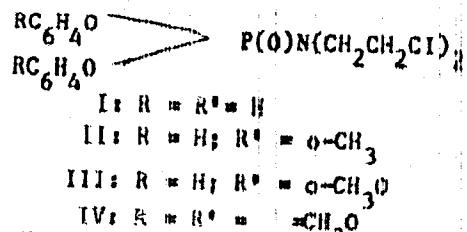
UDC 615.277.3.011.5:542.398

KUZ'MENKO, I. I., and RAPP, L. B., Kiev Scientific Research Institute of Pharmacology and Toxicology

"Hydrolysis of Certain Diaryl Esters of Di-(2-chloroethyl)-amidophosphoric Acid in Acidic and Alkaline Media"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol. 4, No. 7, 1960,
pp 14-16

Abstract: A study was made of hydrolysis in alkaline medium of diaryl esters of di-(2-chloroethyl) of amidophosphoric acid with the same or different aryl moieties (I-IV):

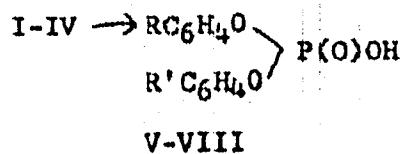


Hydrolysis proceeded in 1 N sodium hydroxide solution at room temperature for 4 hours. In attempting to hydrolyze the synthesized 1/2

USSR

KUZ'MENKO, I. I., et al., Khimiko-Farmatsevticheskiy Zhurnal,
Vol 4, No 7, 1970, pp 14-16

phosphorylated chloroethylamines (I-IV), the authors observed cleavage of the amidic bond with formation of diaryl esters of phosphoric acid (V-VIII) in the form of their sodium salts instead of the anticipated hydrolysis of ester bonds. Free compounds V-VIII were separated upon passage of hydrogen chloride in its sodium salt suspension in benzene:



2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ANDROSTANE DERIVATIVES. XVII. STEROIDAL, 3,2,2-C, PYRAZOLES -U-

AUTHOR-(02)-VCLCVELSKIY, L.N., KUZMENKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--KHM. PRIR. SOedin. 1970, 6(1), 31-3

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANDROGEN, CHEMICAL SYNTHESIS, PYRAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1382

STEP NO--UR/0393/7D/006/001/0031/0033

CIRC ACCESSION NO--AP0133334

REF ID: A651160

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APO13334

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYNTHESIS OF
17BETA,HYDROXYANDROSTANO(3,2,C)PYRAZOLE AND CHOLESTANO(3,2,C)PYRAZOLE BY
THE REACTION OF 2,HYDROXYMETHYLENE,3,OXO STEROIDS WITH HYDRAZINE HYDRATE
IN MEOH IS DESCRIBED. A TWO STEP MECHANISM WAS DISCUSSED WHICH DID NOT
DEPEND ON THE C 17 SUBSTITUENT OF THE STEROID. FIRST THE
2,HYDROXYMETHYLENE,OXO STEROID 3,HYDRAZONE FORMS AND THEN IS DEHYDRATED
TO THE PYRAZOLE. FACILITY: KHR'KOV. NAUCH.-ISSLED. INST.
ENDOKRINOL. KHIM. GURMONOV, KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 547.26.118

RAPP, L. B., PROTSENKO, L. D., and KUZ'MENKO, I. L., Kiev Scientific Research Institute of Pharmacology and Toxicology, Kiev

"Synthesis of Alkyl-Aryl Esters of Di-(2-chloroethyl)amidophosphoric Acid"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 9, Sep 72, pp 943-945

Abstract: Phosphorylated chloroethylamines containing residues of phenols, which were prepared in earlier work by the authors, had an inhibiting effect on experimental tumors. For this reason, 15 di-(2-chloroethyl)amido-phosphoric acid alkyl-aryl esters (I) were prepared, using the following reactions: $(ClCH_2CH_2)_2NP(O)Cl_2 + RC_6H_4OH (+Et_3N)$ $(ClCH_2CH_2)_2NP(O)(OC_6H_4R) + AlkOH (+Et_3N) \rightarrow (ClCH_2CH_2)_2NP(O)(OC_6H_4R)OAlk$ (I). The compounds I with Alk = Et, R = H, o-F, p-F, o-Cl, m-Cl, o-Me, p-Me; Alk = Me, R = o-F, o-Cl, H, p-Me; Alk = Pr, R = H; and Alk = Bu, R = H, p-Me, p-F were viscous liquids that were soluble in common organic solvents, but insoluble in water.

1/1

- 51 -

1/2 - 031 UNCLASSIFIED PROCESSING DATE--23 OCT 70
TITLE--CONSTANT DIFFERENCE IN POTENTIALS IN A LAYER OF AMORPHOUS SELENIUM
ADJACENT TO PLASMA -U-
AUTHOR-(02)-ANDREYEV, A.D., KUZMENKO, L.V.

COUNTRY OF INFO--USSR *K*

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ. MNT. NAVUK 1970, (1),
129-32
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GLOW DISCHARGE, AMORPHOUS SELENIUM, PLASMA DENSITY, PLASMA
ELECTRON TEMPERATURE, CURRENT DENSITY, THERMAL DIFFUSION, ELECTRIC
POTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0407

STEP NO--UR/0428/70/000/001/0129/0132

CIRC ACCESSION NO--AP0111600

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--APO111600

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A GLOW DISCHARGE ON THE CONST. P. D., V, DUE TO THE CONTACT OF A LAYER OF SE, 70 MU THICK, WITH THE PLASMA OF THE POS. COLUMN WAS STUDIED. THE CONCN. AND TEMP. OF ELECTRONS AT 2 MM HG WERE 5 TIMES 10 PRIME9 PER CM PRIMES AND 2 TIMES 10 PRIME4DEGREESK, RESP. INCREASING THE PRESSURE, P, LOWERED V. IT ALSO INCREASED AS THE DISCHARGE CURRENT, I, INCREASED FROM 0.5 TO 1.5 MA. LOWERING P AND INCREASING I INCREASED THE TEMP. OF ELECTRONS IN THE POS. COLUMN. THERMAL DIFFUSION OF PLASMA IN SE MAY CAUSE A CONST. POTENTIAL COMPARABLE WITH THAT NEAR THE WALL. THE COND. OF SE WAS AN EXPENENTIAL FUNCTION OF THE TEMP.

FACILITY: BELORUSS. GOS. UNIV. IM. LENINA,

MINSK, USSR.

UNCLASSIFIED

USSR

KUZ'MENKO, M. I., Institute of Hydrobiology, Academy of Sciences
Ukrainian SSR, Kiev

"Role of Organic Nutrition in the Productivity of Algae"

Kiev, Gidrobiologicheskiy Zhurnal, Vol 6, No 1, 1970, pp 109-123

Abstract: This comprehensive review (114 references) deal with the assimilation of organic compounds by algae. In the first chapter, the organic substances in fresh water which are of autochthonous and allochthonous in origin, are mentioned. These compounds are formed from the photosynthetic products of plankton and from different substances brought in by rain and drainage waters. Usually the abundant growth of algae takes place in waters rich in organic substances. Such substances are: free amino acids, sugars, esters, various other acids, vitamins and aliphatic amines. In the second chapter, the influence of organic substances on algal growth and multiplication is considered. The following carbohydrates are active in promoting growth and development of algae: glucose, arabinose, and maltose increase the biomass of *Anabaena variabilis* and *Anadyctis nidulans*. Glucose stimulates the growth and cell division of *Euglena gracilis* and 1/3

USSR

KUZ'MENKO, M. I., et al., Kiev, Gidrobiologicheskiy Zhurnal, Vol. 5,
No 1, 1970, pp 109-123

Chlorella vulgaris, causing changes in the structure of chloroplasts and in the size of cells. Dinoflagellates use the nitrogen of arginine, asparagine, alanine, methionine and aspartic acid. Arginine, cysteine and tryptophan stimulate cell division and growth in Cyanophyta, including Micrococcus aeruginosa. Glycine increases the rate of cell division by Scenedesmus quadricauda, and in high concentration is responsible for giant cells of abnormal shape. RNA (50 mg/300 ml) increases the biomass and number of cells twofold in Chlorella pyrenoidosa, and RNA (200 mg/l) has the same effect on Scenedesmus quadricauda and Dunaliella salina. The same stimulating effect was observed in Chlorella pyrenoidosa and Asteromonas gracilis treated with urea. Lactic acid increases formation of coccoliths by Hymenomonas (Chrysophyta) and inhibits formation of chromatophores. Ethanol usually stimulates the growth of algae. Prymnesium parvum can grow on glycerol media in darkness. Vitamin B₁₂, biotin and thiamine are important for the dinoflagellates, as well as for the red algae. The addition of bacterial extracts to pure cultures of many algae is very favorable for growth. In the third chapter, the influence of organic substances on the biochemical composition of algae is considered. The work of

2/3

USSR

KUZ'MENKO, M. I., Kiev, Gidrobiologcheskiy Zhurnal, Vol 6, No 1,
1970, pp 109-123

Pringsheim with Haematococcus pluvialis is mentioned. This algal species, in the presence of acetates, vitamins B₁ and B₁₂, peptone and beef extract, loses its red color and turns green. It becomes incapable of forming hematochrome, indicating the deep penetration of organic substances into the cellular structure. It has been found that glucose, caprolactam, sodium and ammonium acetate stimulate the formation of carotenoids in Chlorella and Chlamydomonas. Amino acids (glycine, alanine, glutamic acid) and urea increase the chlorophyll content in algae. Acetates favor the synthesis of lipids. It was concluded that more intensive research is needed in this area.

3/3

- 23 -

KUZ'MENKO, M.V.

INVENTIONAL VALUE OF A METHOD FOR THE PARTIAL OXIDATION
OF THE PRODUCTS OF HUMAN VITAL FUNCTIONS
Inventor by G. S. BINGMANN, S. V. KOTYAGIN,
V. V. KOTOV and G. I. VOLKOVICH, "Central Institute of
Foodstuffs Biology, Physiology, Equipment, Problems in
Biocare and Medicine", Moscow, USSR.

1. At the present time the literature contains indications on different technological methods for processing the products of man's vital functions (vacuum distillation, thermal distillation, biological mineralization, etc.). Each of these methods has its advantages and disadvantages and the method for processing wastes is selected taking into account the specific model or a life support system and the power supply for systems.

2. In some cases it is desirable to carry out a partial oxidation of the products of man's vital functions. It is characterized by:

- a total decontamination of the initial product;
- a minimum return of moisture, including pyrolysis, consisting of 70-80% carbon;
- formation of a gas phase which after catalytic oxidation is safe for plants to breathe;
- small expenditures of oxygen, 10% of the maximum quantity necessary according to stoichiometric expressions;
- no carried out an experiment consisting of 70 total on a definite diet. A total of 1.5-2 hours was expended in processing 150-200 g of product.

4. The use of catalysts made possible a considerable decrease in the oxidation temperature for the vapor phase,

SPPS 56, 495
14 July 92

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TOXICOLOGICAL CHARACTERISTICS AND MORPHOLOGICAL CHANGES IN ANIMALS
UNDER THE EFFECT OF PHENOXYPHENOL AND MONOMETHYL ETHER OF RESORCIN -U-
AUTHOR--(02)-KUZMENKO, N.M., RAPPORPORT, M.B.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE ZELO, 1970, NR 4, PP 151-155

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BENZENE DERIVATIVE, ETHER, RESORCINAL, SKIN PHYSIOLOGY,
ABSORPTION, KIDNEY FUNCTION, LIVER FUNCTION, NERVOUS SYSTEM, TOXICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1691

STEP NO--UR/0475/70/000/004/0151/0155

CIRC ACCESSION NO--AP0129061

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO—AP0129061

ABSTRACT/EXTRACT--(U) GP-0— ABSTRACT. PHENOXYPHENOL (PP) AND MONOMETHYL ETHER OF RESORCIN (MER) APPLIED TO THE SKIN AND MUCOSA EXERT A LOCAL AND REACTIVE EFFECT AND AFFECT RENAL, HEPATIC AND NERVOUS FUNCTION. PP AND MER LEAD TO HEMODYNAMIC AND DYSTROPHIC CHANGES MAINLY IN THE LIVER, KIDNEYS AND LUNGS, THEIR CHRONIC EFFECT ALSO LEADING TO STRUCTURAL CHANGES CHARACTERISTIC OF NEPHRO-NEPHRITIS AND PROTEIN FATTY LIVER DYSTROPHY. THE CHANGES WERE MORE MARKED WITH PP, EVIDENCING ITS CUMULATIVE PROPERTIES.

FACILITY: VSESOVJETNYY NAUCHNO-POLIMERNYKH I PLASTICHESKIH MASS KIYEVSKIY NAUCH-ISSLED. INSTITUT GIGIYENY TRUDA I PROFZABOLEVANIY.

UNCLASSIFIED

USSR

UDO 621.395.69:d21.391.63

KUZ'MENKO, N.N., PASYNKOVVA, O.V., SAVEL'YEV, G.A.**"Photosensitive Films Elements For Optoelectronic Devices With Optical And Electrical Coupling"**

Izv. Leningr. elektrotekhn. in-ta (Journal Of The Leningrad Electrical Engineering Institute), 1972, Issue 108, pp 151-157 (from RZh:Elektronika i yeyo primeneniye, No 11, Nov 1972, Abstract No 11B371)

Translation: During the creation of bistable d-c optroms consisting of series-connected photodiodes and electroluminescent emitters (EE), difficulties appear during matching of the elements with respect to conductivity. The development is described of a film photodiode suitable for direct coupling with a film EE, which emits in the 580-586 nm region with a 20-volt voltage and a current density of 20-25 mA/cm². The photodiode was produced by the method of successive build-ups on a rotating preheated glass substrate of layers of CdS, CdSe, and CdCl₂ with subsequent annealing in air. The composition of the film of a photodiode which has a spectral characteristic matched with the EE corresponds to the formula CdS_{0.46}Cd_{0.54} for which evaporation of CdS and CdSe is carried out with their weight ratio 3:2. The current-voltage and spectral characteristics of the photodiode are given. 5 ill. 4 ref. N.S.

1/1

1/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE MATRIX ELEMENT OF THE DIPOLE MOMENT OF AN A
PRIME2 SIGMA-X PRIME2 II ELECTRON TRANSITION IN A SiF MOLECULE -U-

AUTHOR-(04)-KUZYAKOV, YU.YA., OVCHARENKO, I.YE., KUZMENKO, N.YE.,

KURDYUMOVA, I.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 555-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SILICON-COMPOND, FLUORIDE, ABSORPTION SPECTRUM, MATRIX
ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0327

STEP NO--UR/0368/10/012/003/0553/0557

CIRC ACCESSION NO--A0119314

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0119314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON ABSORPTION SPECTRUM WAS TAKEN OF THE SiF MOLE. BY USING IMPACT TUBE TECHNIQUE TO PREP. A SUFFICIENT AMT. OF GASEOUS SiF. BY STARTING FROM THE EXPTL. INTENSITY DATA, THE SQUARED MATRIX ELEMENT OF THE DIPOLE MOMENT OF A PRIME2 SIGMA-X PRIME2 II ELECTRON TRANSITION IS 5.9 PLUS OR MINUS 0.6 AT. UNITS. THIS VALUE CORRESPONDS TO AN OSCILLATOR STRENGTH OF 14.1 PLUS OR MINUS 0.41 TIMES 10 PRIME NEGATIVE1. REAL ACCURACY IN DETG. THE MATRIX ELEMENT CAN BE CONSIDERABLY SMALLER Owing TO SYSTEMATIC ERRORS INVOLVED IN SUCH QUANTITIES AS HEATS OF FORMATION OF SiF, SiF SUB2, ETC. AND FRANCK CONDON FACTORS.

UNCLASSIFIED

USSR

UDC 532

KUZ'MENKO, P. P., SUPRUNENKO, P. A., and CHIRKO, L. I., Kiev State University

"State of Sn-Bi Alloys According to Data of a Study of Magnetic Susceptibility"

Kiev, Metallofizika, No 40, 1972, pp 68-72

Abstract: Results are presented from a study on the magnetic susceptibility of tin, bismuth, and their alloys (10, 20, 30, 40, 43, 50, 60, 70, 80, and 90 at.% Bi) in the solid and liquid states. The feature of the concentration relationship of magnetic susceptibility of liquid alloys containing approximately 20 at.% was noted. On the basis of the values of m/m^* , obtained in the work (m --free electron mass, m^* --effective electron mass), there was noted a tendency of conductivity electron interaction in Sn-Bi melts. 3 figures, 1 table, 24 bibliographic references.

1/1

USSR

UDC 539.21.536.421

KUZ'MENKO, P. P., GALINA, G. A., and USHANKIN, YU. V., Kiev State University

"Relationship of Young's Modulus to the Degree of Close Ordering in Alloys of the Mg-Cd System"

Kiev, Metallofizika, No 40, 1972, pp 59-61

Abstract: It is shown that within the limits of error of the experimental parameters used, in Mg_3Cd and $MgCd$ alloys of the hexagonal system the change of Young's modulus during disordering is proportional to the degree of close ordering. 2 figures, 6 bibliographic references.

1/1

USSR

UDC 669.405:539:219.3

KUZ'MENKO, P. P., Kiev State University

"Determination of Diffusion Activation Volume for the Vacancy Mechanism"

Kiev, Metallofizika, No 39, 1972, pp 111-118

Abstract: The relationship between fusion heat and diffusion activation energy is examined. It was shown that the ratio of these magnitudes was equal to the activation volumes during melting and diffusion. The activation volumes of diffusion were computed for many metals. It turned out that this magnitude was close to 0.6 for close-packed lattices, while for metal with a b.c.c. lattice the value was on the order of 0.4. The energies of formation and movement of vacancies were calculated. It was shown that the activation energy was close to the vacancy formation energy. The nature of the diffusion anomaly was examined. 1 figure, 3 tables, 8 bibliographic references.

1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DIFFUSION AND ELECTRICAL TRANSPORT OF SILVER IN LEAD -U-

AUTHOR-(03)-KUZMENKO, P.P., GRINEVICH, G.P., DANILOMEKO, B.A.

COUNTRY OF INFO--USSR *K*

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 318-323

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL DIFFUSION, LEAD ALLOY, SILVER CONTAINING ALLOY,
ACTIVATION ENERGY, ELECTRON MOBILITY, ELECTRIC POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0340

STEP NO--UR/0126/07029/00270318/0323

CIRC ACCESSION NO--AP0129572

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0129572
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION AND ELECTRICAL
TRANSPORT OF AG ATOMS IN Pb WERE STUDIED BY THE INTEGRAL RESIDUE METHOD.
IN THE DIFFUSION EQUATION, THE PRE EXPONENTIAL FACTOR IS 6.4 TIMES 10
PRIME NEGATIVE2 CM PRIME2-SEC AND THE ACTIVATION ENERGY 14.4 KCAL-HOLE.
AT TEMP. BELOW 2300GREESC THE AG TENDS TO MOVE TOWARDS THE ANODE AND AT
HIGHER TEMP. TOWARDS THE CATHODE. THE INVERSION IN THE DIRECTION OF
ELECTRICAL TRANSPORT WAS ATTRIBUTED TO THE DIFFERENT TEMP. DEPENDENCE IN
THE INTERACTION BETWEEN THE DIFFUSING AG IONS AND ELECTRONS AND HOLES,
RESP.

UNCLASSIFIED

USSR

UDC 616.61-002.151-036.21(470.312)

POVALISHINA, T. P., SADOVSKAYA, Ye. V., SHTERN, M. A., and KUZ'MENKO, S. V.,
Institute of Poliomyelitis and Viral Encephalitides, USSR Academy of Medical
Sciences

"Sites of Infection With Hemorrhagic Fever With a Renal Syndrome in One of
the Foci in Tul'skaya Oblast"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
pp 41-45

Abstract: The Leninskiy rayon in Tul'skaya oblast is a forest-covered recreational area which has many summer cottages and is periodically visited by nonimmune vacationers. Since it also is a focus of hemorrhagic fever with a renal syndrome, many zoological, parasitological, and epidemiological observations were conducted there between 1951 and 1966. During these 15 years, a total of 5,031 small rodents of 17 different species were caught, with Clethrionomys glareolus the most numerous and representing 67.2% of rodents caught inside cottages. Annual outbreaks of the disease, involving a few to several hundred cases, are characteristically limited to small areas and occur in the spring and summer season, with peaks in June-August. Most people are infected inside the makeshift accommodations (cottages and tents) while tidying

1/2

USSR

POVALISHINA, T. P. et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 41-45

up the facilities or during sleep. No clear-cut correlation was found between the severity of the outbreak and the size of the rodent population. On the other hand, the duration of the rodents' reproductive period seems to be of great significance, since late autumn and winter breeding periods are preceded by the greatest outbreaks of hemorrhagic fever. Of the many preventive methods developed, rodent extermination in housing facilities is more effective than extermination in the rodents' natural habitats. The best preventive measure is construction of better-quality cottages, which are inaccessible to rodents.

2/2

- 23 -

USSR

UDC 539.43

AFONIN, A. I., KUZ'MENKO, V. A., and SHEVCHUK, A. D., Kiev

"Problem of the Influence of Loading Frequency on Fatigue Strength of Metal"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 62-67.

Abstract: Results are presented from fatigue testing with symmetrical extension-compression cycles at 10 and 20 kHz for copper, armco iron, type 45 steel, chrome steels, nickel alloys, and type VT3-1 alloy. The results produced are compared with the results of low-frequency tests. It is found that the influence of loading frequency on cyclical strength is greater, the higher the level of energy dissipation in the material and the more ductile the metal.

1/1

USSR

UDC: 539.43

Kuz'menko, V. A., Afonin, A. I., Kiev

"Dissipation of Energy in Metals in High-frequency Fatigue Tests. Report II"

Kiev, Problemy Prochnosti, No 7, 1972, pp 82-85.

Abstract: The dissipation of energy in nickel and titanium-based alloys was measured with cyclical extension and compression at 10 KHz on the basis of the rate of heating and cooling of the test specimen. The amplitude dependences of specific losses in the material and their dependence on the number of loading cycles in the process of fatigue testing are presented.

1/1

USSR

UINC: 589.43

Kuz'menko, V. A., Shevchuk, A. D., Kiev

"Dissipation of Energy in Metals in High-frequency Fatigue Tests. Report 1"

Kiev, Problemy Prochnosti, No 7, 1972, pp 76-81.

Abstract: The dissipation of energy in the material was determined calorimetrically during cyclical extension and compression of specimens of copper, armco iron, steels types 40 and 1Kh18N10T and D16T alloy at 20 KHz. The amplitude dependences of the characteristics of energy dissipation are determined with gradually increasing amplitude of stresses and with constant stress value during the process of fatigue testing.

1/1

- 59 -

USSR

UDC 539.3

KUZ'MENKO, V. A. (Kiev), Institute of Strength Problems, Academy of Sciences, Ukrainian SSR

"A Dual Model of a Deformable Solid"

Kiev, Problemy Prochnosti, No 10, 1970, pp 43-48

Abstract: The article deals with elastic deformations of brittle and fluid elements, the combination of which comprises a dual model. The specific energy values of linear and shear deformations in the elements of the dual model are computed. Note is taken of the fact that strain energy of distortion is not the energy of shear deformations. On the basis of new components of the strain energy of distortion, criteria of the limit elastic state are formulated, the equations of the limit surfaces are written, the deformation tensor is represented in the form of four invariant terms. The aim of such a representation of the deformation components is to develop a new method for transferring the rules governing inelastic deformation, established with the simplest loading of a solid, to other, more complex forms of loading. 7 bibliographic entries.

1/1

USSR

UDX 539.81

KUZ'MENKO, V. M., LAZAREV, B. G., MEL'NIKOV, V. I., and SUDOVTSOV, A. I.,
Physicotechnical Institute, Academy of Sciences Ukrainian SSR, Khar'kov

"Dependence of Amorphous-Crystalline Transition Temperature on Thickness of
Metallic Layers Condensed at Liquid-Helium Temperature"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 17, No 4, Apr 72, pp 682-683

Abstract: The article describes results of a study of the dependence of the amorphous-crystalline transition temperature on layer thickness d for a series of metals (iron, bismuth, ytterbium, beryllium, gallium) condensed on glass substrates cooled with liquid helium. It was found for iron, bismuth, and ytterbium that there is a smooth decline in T_t with an increase in thickness right up to the critical value, at which a discontinuous phase transition occurs at the condensation temperature (in the present case at the liquid-helium temperature). Similar variations are found in gallium and beryllium layers, but the phenomenon is complicated by their incomplete transition from the amorphous to the crystalline state, after which in the layers above the critical thickness there remain residues of the amorphous phase in the crystalline matrix formed. The function $T_t(d)$ is related to the thermodynamic peculiarities of the thin films.

1/1

USSR

UDC 539.21

LAZAREV, B. G., (Academician, Academy of Sciences UkrSSR), KUV'MENKO, V. H.,
SUDOVTSOV, A. I., and MEL'NIKOV, V. N.

"Specific Features of Bismuth Films Condensed at Liquid Helium Temperatures"

Moscow, Doklady Akademii Nauk SSSR (Proceedings Academy of Sciences USSR),
Vol 194, No 2, 1970, pp 302-305

Abstract: Ytterbium and iron films deposited on substrates cooled by liquid helium appear to be amorphous until a critical thickness is reached, at which point they suddenly assume their normal bulk structure. The purpose of this work is to study thin superconducting films of nonsuperconducting materials, such as bismuth, and to determine the critical thickness at which the superconducting structure changes into the nonsuperconducting modification.

Hilsch showed that fresh bismuth films are amorphous and superconducting at 6°K, but not at 14 to 20°K, at which temperature the bismuth crystallizes.

Disk-shaped films of 99.9999% pure bismuth were vacuum-deposited on glass substrates at temperatures < 2°K. A stepwise crystallization occurs

USSR

LAZAREV, B. G., et al., Doklady Akademii Nauk SSSR, Vol 194, No 2, 1971
pp 302-305

at a film thickness of $\sim 600 \text{ \AA}$. The change in phase also occurs at temperatures of 12 to 35°K , accompanied by a twenty-fold increase in resistance. For less pure films, phase conversion occurs at about 1300 \AA .

From resistance-temperature curves it is found that traces of the amorphous phase remain up to temperatures of 25°K . Films thicker than 1300 \AA develop cracks. Comparisons are made with films of different geometries. Ribbons exhibit different behavior, possibly due to edge effects, where thickness is less than at the center. The 14 disks tested produced identical results.

Orig. art. has 4 figures and 12 refs.

2/2

136

Acc. Nr: AP0043586 KUZMENKO V. M.
Ref. Code: UK 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 434-437

ON THE MINIMUM OF THE ELECTRICAL RESISTANCE OF IRON,
COPPER, LUTETIUM AND THULIUM LAYERS OBTAINED
BY LOW TEMPERATURE CONDENSATION

V. M. Kuzmenko, B. G. Lazarev, A. I. Sudovtsov, V. I. Melnikov

The temperature dependence of the electrical resistance of Fe, Cu, Lu and Th layers obtained by deposition of the vapor of the metals on a backing cooled by liquid helium is studied. In all freshly deposited layers a minimum of electrical resistance is observed in the region of 4 to 25° K. The temperature of the minimum is found to depend on the thickness of the metal and on its degree of annealing. As a rule, high temperature annealing results in the disappearance of the resistance minimum in the thicker layers. It is suggested that a new singularity of conductivity electron scattering may exist in strongly distorted metallic lattices.

//

18 DI

REEL/FRAME
19762058

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INCREASING THE MECHANICAL PROPERTIES OF SIDE SILL STRIP 30T STEEL
FOR TRUCKS -U-
AUTHOR-(03)-CHECHEKIN, YU.F., VOZLINSKIY, A.G., KUZMENKO, V.S.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 166-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--MECHANICAL PROPERTY, TENSILE STRENGTH, CARBON STEEL, MANGANESE STEEL, SILICON STEEL, TRUCK/(U)30T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1865

STEP NO--UR/0133/70/030/002/0166/0167

CIRC ACCESSION NO--AP0115684

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NO--AP0115684

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECH. PROPERTIES OF STEEL
CONTG. C 0.26-0.33, MN 0.5-0.8. SI 0.0BPERCENT, WERE INCREASED TO 52-58
KG-MM PRIME2 TENSILE STRENGTH, 37.5-42 KG-MM PRIME2 YIELD POINT, AND
21-5PERCENT ELONGATION BY NORMALIZING AT 830-8600EGREES IN A CONTINUOUS
INSTALLATION WHICH IS DESCRIBED. FACILITY: MO\$K. AVTOZAVOD IM.
LIKHACHEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.822.7'759:542.958.3:541.67:543.422.4.6' 1'544

POSHARSKIY, A. F., KUZ'MENKO, V. V., AZIMOV, V. A., and WAKHON'OV, L. N.,
Rostov State University, Rostov-on-the-Don, All Union Scientific Chemical-
Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Chichibabin Reaction in the Series of Aminopyridines, Azaindoles, and
Azaindolines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, Sep 73, pp 1232-1239

Abstract: In contrast to 3- and 4-aminopyridines the 2-isomers can be
aminated with sodium amide to yield 2,6-diaminopyridine. Among the dimethyl-
aminopyridines the 3- and 4-isomers are the most reactive ones in the Chichibabin
reaction. 2-Dimethylaminopyridine can be converted with difficulty to 2,6-
diaminopyridine in a reaction with sodium amide, the first step being the
replacement of the dimethylamino radical with the amino group. Azaindoles
and azaindolines do not react in the amination reaction. Under the influence
of sodium amide 1-phenyl-5-azaindole opens its pyrrole cycle forming 3-vinyl-
-4-phenylaminopyridine.

1/1

- 6 -

USSR

UDC 547.785.5'821.07

POZHARSKIY, A. F., KUZ'MENKO, V. V., KOLODYAZHNYY, YU. W., SIMONOV, A. M.,
Rostov State University, Rostov-na-Donu

"Relative Reactivity of the Pyridine and Benzimidazole Systems in the
Chichibabin Reaction"

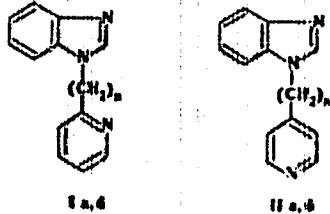
Riga, Khimiya Geterotsiklicheskih Soyedineniy, No 9, 1972, pp 1252-1263

Abstract: Some 1- α (or γ) -pyridiyl and 1- α (or γ) -pyridylethyl-
benzimidazoles were synthesized and their reactivity to methyl iodide and
sodamide was studied. The results are discussed from the point of view
of basicity, the magnitude of the dipole moments, the mutual effect of
heterorings and the distribution of electron density in them, calculated
or estimated from the relative position of the chemical shifts in the para-
magnetic resonance spectra. The benzimidazole system enters into the Chichi-
babin reaction appreciably more easily than the pyridine system. On the
basis of the paramagnetic resonance spectral data for bases and cations of
pyridine and benzimidazole it is proposed that this phenomenon arises from
the high degree of polarizability of the O-H bond of the benzimidazole by
comparison with the O-N bond of the pyridine on their coordination with
 NaNH_2 . The protonation point of compounds I and II

1/2

USSR

POZHARSKIY, A. F., et al., Khimiya Geterotsiklicheskikh Soyuzineniy, № 9,
1972, pp 1252-1263



the nature of the interaction of the imidazole and pyridine rings in N-pyridylbenzimidazoles and the reaction of N-pyridylbenzimidazoles to sodium amide are discussed. The procedures for synthesizing a number of the indicated compounds, the method of measuring the ionization constants, taking the paramagnetic resonance spectra, performing the quantummechanical calculations and determining the dipole moments are described.

2/2

Acc. Nr: AP0054656 *KUZMENKO* Ref. No: 218 9115 3

PRIMARY SOURCE: Ortopediya, Travmatologiya i Prostezirovaniye,
1970, Nr 2, pp 38-45

ANTIBIOTICS IN THE PROPHYLAXIS AND TREATMENT OF BACTERIAL
INFECTION IN TRAUMATOLOGIC AND ORTHOPAEDIC PATIENTS

V. M. Mel'nikova, A. I. Gladshteyn, O. V. Markina, M. I. Malova,
N. P. Ivanova, Z. G. Svirinova and V. V. Kuznainko

Facts on the prophylaxis and treatment with antibiotics of infected wounds, in traumatoologic and orthopaedic patients based on clinical and laboratory data of CIIC are presented in the paper. In primary surgical wound debridement the authors prescribe penicillin with streptomycin or tetracycline. It is stressed that the use of antibiotics in the so-called "clean" orthopaedic operations should be substantially limited and the demands of surgical aseptic enhanced. In purulent wound infection the staphylococcus and representatives of the intestinal group of microorganisms were the most common bacterial associations cultured. For the last year the appearance of staphylococcus in the microflora from the infected wounds increased. Various antibiotics, their combinations with each other, sulfonilamides or nitrofuranic preparations, depending on the microflora sensitivity to them and concentration created in the focus of infection, are used in the treatment of purulent infection. The success of antibacterial therapy has been shown to depend on the rational use of antibiotics in complex with other methods of conservative and operative treatment and drugs which stimulate the organism reactivity.

REEL/FRAME
19831822

172 009 UNCLASSIFIED PROCESSING DATE--13NDV70
TITLE--REACTION OF BENZIMIDAZOLE DERIVATIVES WITH CHLOROSULFONYLIC ACID -U-

AUTHOR-(03)-SAYAPIN, V.G., SIMONOV, A.N., KUZMENKO, V.V.

COUNTRY OF INFO--USSR

SOURCE--Khim. Geterotsikl. Soedin. 1970, 151, 681-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZIMIDAZOLE, CHLORINATED AROMATIC COMPOUND, SULFONIC ACID,
CHEMICAL SUBSTIUTENT, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1018 STEP NUMBER--0409/70/000/005/0081/0083

CIRC./ACCESSIONING--HARD COPY

UNCLASSIFIED

2/2 - 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--A90134730

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. THE TITLE REACTION GAVE BENZIMIDAZOLE, 5-SULFONYL CHLORIDES WITH BENZIMIDAZOLES HAVING ELECTROPHILIC SUBSTITUENTS AT THE 2 POSITION; OTHER BENZIMIDAZOLES YIELDED 5-SULFONIC ACIDS. THUS, TO 4 ML OF FRESHLY DISTILLED HSO SUB3 CL WAS ADDED OVER 30 MIN 1.18 G BENZIMIDAZOLE, AND THE MIXTURE STIRRED 30 MIN AT 105-100DEGREES TO GIVE 1.65 G I (R EQUALS H, X EQUALS SO SUB3 H), M. 365DEGREES. SIMILARLY OBTAINED WAS I (R EQUALS ME, X EQUALS SO SUB3 H), M. 365DEGREES. 2-PHENYLBENZIMIDAZOLE SIMILARLY GAVE 80PERCENT I-HCL (R EQUALS PH, X EQUALS SO SUB2 CL), M. 363DEGREES, WHICH GAVE I (R EQUALS PH, X EQUALS SO SUB2 CL), M. 265DEGREES; ALSO OBTAINED AS A BY PRODUCT WAS 14PERCENT I (R EQUALS PH, X EQUALS SO SUB3 III), M. 300DEGREES (91PERCENT), AND FROM IT THE CORRESPONDING SULFONIC ACID, M. 390DEGREES. STRUCTURE PROOFS WERE DESCRIBED. FACILITY: RUSSIA.

UNCLASSIFIED

1/2 012 UNCLASSIFIED
TITLE--ETHYL OR ISOPROPYL BENZOIC ACID -U-

PROCESSING DATE--13NOV70

AUTHOR--(321)-KUZHENKOV, A.A., ZOTOVA, N.L.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,587
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARISTVE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREA--CHEMISTRY

TOPIC TAGS--BENZOIC ACID, CHEMICAL PATENT, ISOPROPYL BENZENE, OXIDATION,
CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0859

STEP NU--UR70482/70/000/000/000/0000

CIRC ACCESSION NO--AA0132944

CLASSIFICATION

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132949
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPO. IS PREP. BY
OXIDIZING METHYLETHYL OR METHYLISOPROPYLBENZENE WITH KMNO SUB4 IN A.Q.
PYRIDINE AT SMALLER THAN OR EQUAL TO 100DEGREES.

UNCLASSIFIED

1/2 015

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

TITLE--SPECTRAL STUDIES OF THE INTERMOLECULAR INTERACTION OF NITROBENZENE
WITH P ANISIDINE, DIPHENYLAMINE, AND DIPHENYLETHANE -U-

AUTHOR-(02)-GAVRILOV, G.A., KUZMENOK, I.P.

COUNTRY OF INFO--USSR

K

SOURCE--IZV. VYSSH. UCHER. ZAVED., FIZ. 1970, 13(2), 119-21

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITROBENZENE, DIPHENYLAMINE, UV SPECTRUM, COMPLEX COMPOUND,
AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0789

STEP NO--UR/0119/70/013/002/0119/0121

CTRC ACCESSION NO--AP0124458

UNCLASSIFIED